



## PATENT COOPERATION TREATY

W/O 2003/001992  
PCT/JP2004/008801

From the INTERNATIONAL BUREAU

PCT

SECOND AND SUPPLEMENTARY NOTICE  
INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION (TO DESIGNATED OFFICES  
WHICH APPLY THE 30 MONTH TIME  
LIMIT UNDER ARTICLE 22(1))

(PCT Rule 47.1(c))

To:

MARUYAMA, Takao  
MARUYAMA PATENT OFFICE, SAM Bldg. 3floor, 38-23  
Higashi-Ikebukuro 2-chome, Toshima-ku,  
Tokyo 170-0013  
JAPON

## IMPORTANT NOTICE

Date of mailing (day/month/year)

27 October 2005 (27.10.2005)

Applicant's or agent's file reference

DP-1006PCT

International application No.

PCT/JP2004/008801

International filing date (day/month/year)

23 June 2004 (23.06.2004)

Priority date (day/month/year)

26 June 2003 (26.06.2003)

Applicant

NEC CORPORATION et al

1. **ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), **does not apply**, please see Form PCT/IB/308(First Notice) issued previously.

2. Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, **does apply**, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:  
06 January 2005 (06.01.2005)

AU, AZ, BY, CN, CO, DZ, EP, HU, KG, KP, KR, MD, MK, MZ, NA, RU, SY, TM, US

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

3. The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, **does apply**, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1 :

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BW, BZ, CA, CR, CU, CZ, DE, DK, DM, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KZ, LC, LK, LR, LS, LT, LV, MA, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, SC, SD, SG, SK, SL, TJ, TN, TR, TT, UA, UZ, VC, VN, YU, ZA, ZW

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

**4. TIME LIMITS for entry into the national phase**

For the designated or elected Office(s) listed above, the applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **30 MONTHS** from the priority date.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain of the designated or elected Office(s) listed above. For regular updates on the applicable time limits (30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Yoshiko Kuwahara

Facsimile No.+41 22 740 14 35

Facsimile No.+41 22 338 90 90

(19) 世界知的所有権機関  
国際事務局



(43) 国際公開日  
2005 年1 月6 日 (06.01.2005)

PCT

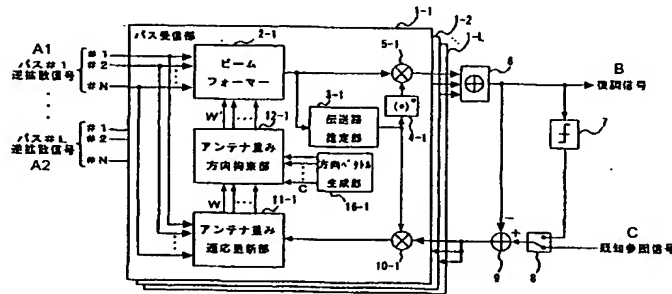
(10) 国際公開番号  
WO 2005/001992 A1

- (51) 国際特許分類: H01Q 3/26, H04B 7/10
- (21) 国際出願番号: PCT/JP2004/008801
- (22) 国際出願日: 2004 年6 月23 日 (23.06.2004)
- (25) 国際出願の言語: 日本語
- (26) 国際公開の言語: 日本語
- (30) 優先権データ:  
特願2003-182701 2003 年6 月26 日 (26.06.2003) JP
- (71) 出願人 (米国を除く全ての指定国について): 日本電気株式会社 (NEC CORPORATION) [JP/JP]; 〒1088001 東京都港区芝五丁目7番1号 Tokyo (JP).
- (72) 発明者; および
- (75) 発明者/出願人 (米国についてののみ): 吉田 尚正 (YOSHIDA, Shousei) [JP/JP]; 〒1088001 東京都港区芝五丁目7番1号 日本電気株式会社内 Tokyo (JP).
- (74) 代理人: 丸山 隆夫 (MARUYAMA, Takao); 〒1700013 東京都豊島区東池袋2-38-23 SAMビル3階 丸山特許事務所 Tokyo (JP).
- (81) 指定国 (表示のない限り、全ての種類の国内保護が可能): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,

[続葉有]

(54) Title: ADAPTIVE ANTENNA RECEPTION METHOD AND DEVICE

(54) 発明の名称: 適応アンテナ受信方法および装置



A1...PATH #1 DESPREAD SIGNAL  
A2...PATH #L DESPREAD SIGNAL  
1-1...PATH RECEPTION SECTION  
2-1...BEAM FORMER  
12-1...ANTENNA WEIGHT DIRECTION RESTRAINT SECTION  
11-1...ANTENNA WEIGHT ADAPTIVE UPDATE SECTION  
3-1...TRANSMISSION PATH ESTIMATION SECTION  
16-1...DIRECTION VECTOR GENERATION SECTION  
B...DEMODULATION SIGNAL  
C...KNOWN REFERENCE SIGNAL

(57) Abstract: There is provided an adaptive antenna reception device having an improved follow-up for an angle change of the coming direction of a desired signal. An antenna weight adaptive update means (11-1) adaptively updates the antenna weight from a signal received by each antenna element and an error signal obtained by using the desired signal corrected according to transmission path estimation. An antenna weight direction restraint means (12-1) performs restraint processing on the antenna weight obtained by the antenna weight adaptive update means (11-1) so that the beam gain is constant in the coming direction of the desired signal. A beam former (2-1) receives the desired signal by the array antenna by using the antenna weight subjected to the restraint processing in the antenna weight direction restraint means (12-1). Transmission path estimation means (3-1) estimates a transmission path of the desired signal received by the beam former (2-1) and corrects the desired signal by using the estimation result.

(57) 要約: 希望信号の到来方向の角度変化に対する追従性を向上した適応アンテナ受信装置を提供する。アンテナ重み適応更新手段11-1は、各アンテナ素子で受信した信号と伝送路推定に基づいて補正された希望信号とを用いて求められた誤差信号とからアンテナ重みを適応的に更新する。アンテナ重み方向拘束手段12-1は、希望信号の到来方向にビーム利得が一定となるように、アンテナ重み適応更新手段11-1で求めたアンテナ重みに拘束処理を施す。ビームフォー

[続葉有]